

THREE-STAGE SWITCH FABRIC WITH BUFFERED CROSSBAR DEVICES

ABSTRACT OF THE DISCLOSURE

A switch fabric for routing data has a switching stage configured between an input stage and an output stage. The input stage forwards the received data to the switching stage, which routes the data to the output stage, which transmits the data towards destinations. Each input device of the input stage transmits bids to the crossbar devices of the switching stage to request connections through the switching stage for routing the data to the output devices of the output stage. In one aspect, each crossbar device has (1) a bid arbitrator that determines whether to accept or reject each received bid, wherein, in response to a collision between multiple bids, the bid arbitrator accepts two or more of the colliding bids in a single time slot; and (2) memory for storing one or more accepted cells for the same output device, wherein the crossbar device can transmit grant signals for two or more accepted bids for the same output device in a single time slot. In another aspect, the bid arbitrator is configured to re-consider whether to accept a stored bid that was not accepted in a previous time slot.